

Update: Vessel Traffic Risk Assessment: May 30, 2013

Todd Hass, PhD ¹

¹Puget Sound Partnership

***Updated from presentation given with Chad Bowechop and Fred Felleman at BC Ministry of the Environment: “Land Based Spill Preparedness and Response Symposium” - March 2013**

About PSP

The **Puget Sound Partnership** has legislative mandate to recover the health of Puget Sound by 2020

- Also: “independently assess and advise Washington State’s oil spill programs”
- Consensus from PSP Oil Spill Work Group to use maritime risk assessments and develop/apply risk reduction measures (NTA C8.1.2)

Funding for Vessel Traffic Risk Assessment...

—US Environmental Protection Agency

- Approved Makah Tribe's proposal to update with 2010 VTOSS data
- \$200K to PSP to advance risk assessment and update VTRA

Past & Present VTRA collaboration...

Puget Sound Harbor Safety Committee (HSC)

contributed judgment by expert mariners for the BP-Cherry Point VTRA study completed by GWU et al. in 2008...study released and presented to HSC in April 2012

Makah Tribal Council retained GWU via late-summer grant to researchers; updating the VTRA baseline traffic scenario from 2005 to 2010 and extending offshore

PSP Oil Spill Work Group & HSC overlap considerably; **formed VTRA Steering Committee** in Fall 2012

- Integrating State and Federal regulatory agencies, Tribes, Industries and Stakeholders into a VTRA update **process**
- Agreed that GWU VTRA is the common language by which region evaluates relative maritime traffic risk systemwide

Others involved...

PSP and PSHSC co chair the Steering Committee
USCG, Ecology and Makah are the agency leads,
guiding the update process

Puget Sound Partnership VTRA Steering Committee

Co-Chairs:

- Todd Hass, Puget Sound Partnership
- John Veentjer, Puget Sound Harbor Safety Committee

Federal, State and Tribal Leads [representing]:

- Chip Boothe (alternate Jon Neel), Washington State [Department of Ecology]
- Kiley Ross and R.E. McFarland, US Coast Guard [Sector Puget Sound and District 13, respectively]
- Chad Bowechop (alternate Fred Felleman), Makah Nation [native American Tribes]

Core Steering Committee Members:

- Mark Homeyer, Crowley Maritime [tug and barge]
- Del Mackenzie, Puget Sound Pilots [pilots]
- Mike Moore, Pacific Merchant Shipping Association [shipping/steamship lines]
- Vince O'Halloran, Washington State Labor Council (alternate Lori Provinci) [labor]
- Mike Doherty, Clallam County [Washington Association of Counties]
- Jeff Shaw, Polar Tankers (alternate Frank Holmes, Western States Petroleum Association) [petroleum industry]

About the model:

(1) Collaborative vs adversarial analysis in environmental policy

Busenberg (1999) compared approaches to two technically intensive maritime oil trade policy disputes

- Adversarial (debate) approach led to “distorted communication” and ***stalemate***
- Collaborative approach gave all stakeholders oversight of joint research team—promoting mutually credible results and ***resolution***

About the model:

(2) Past VTRA (van Dorp and Merrick 2009) quantified contribution of different **interventions** on reducing spill risk (oil outflow)

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Risk reduction measures

Tug escort = ↓61.7%

Double hull = ↓23.6%

1-way zone = ↓6.3%

In: Annals of Operations Research, published online before print December 12, DOI: 10.1007/s10479-009-0678-1

On a Risk Management Analysis of Oil Spill Risk using Maritime Transportation System Simulation

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^bDepartment of Statistical Sciences & Operations Research, Virginia Commonwealth University

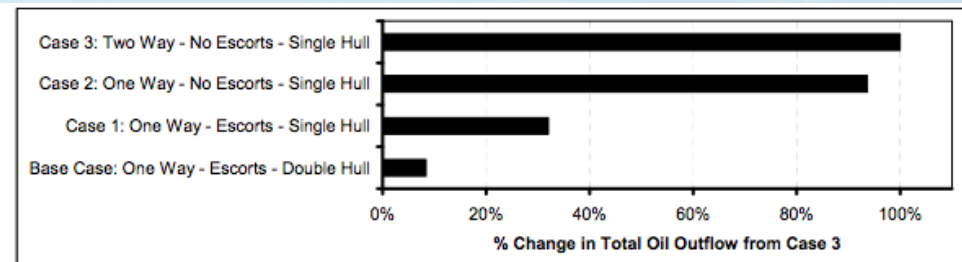
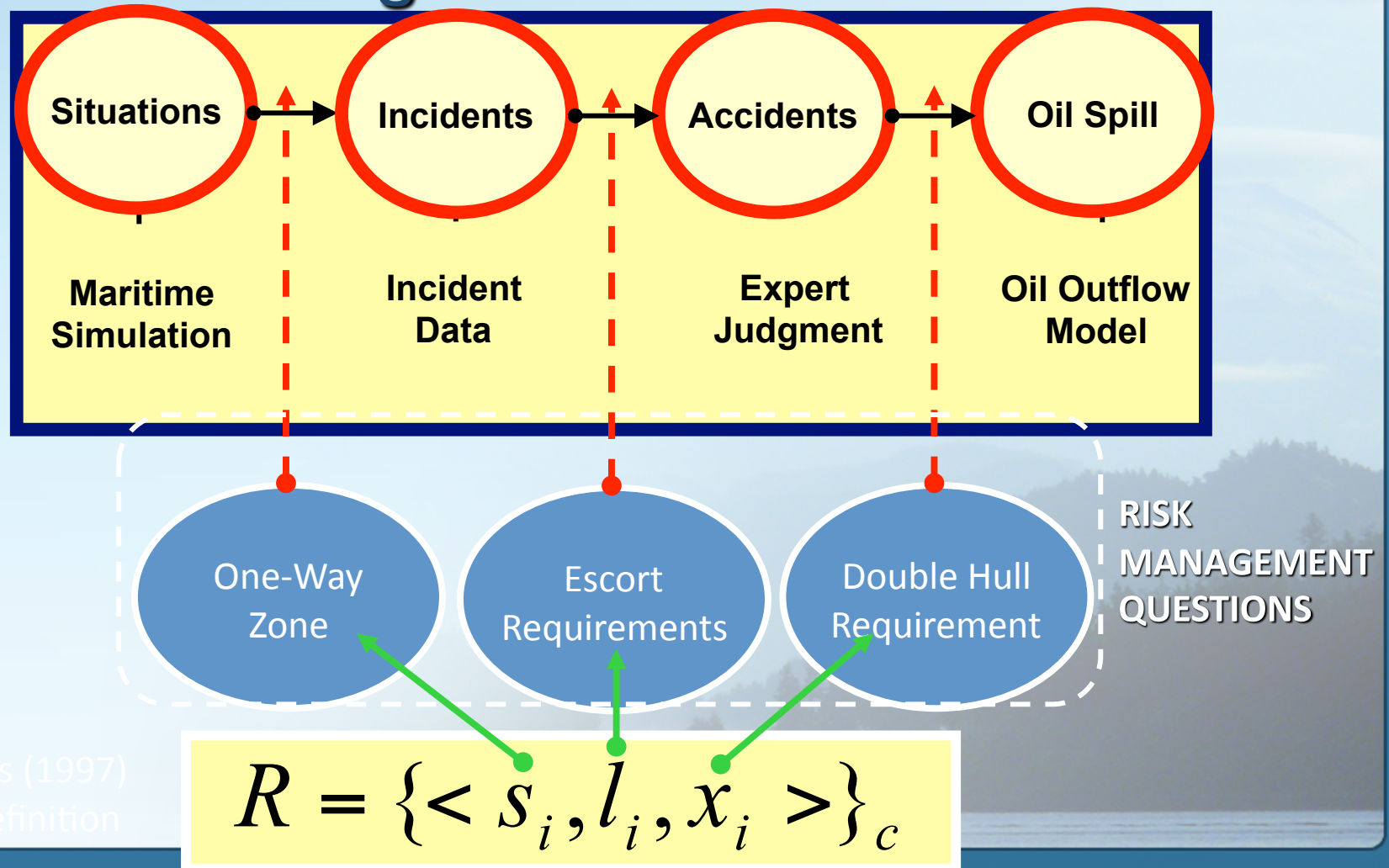


Figure 14. Total overage annual oil outflow (in m^3) separated by persistent oil (PO) and non-persistent oil (NPO) by VOI's, IV's and scenarios.

About the model:
(2) continued...

Risk Management of a Causal Chain



Kaplan's (1997)
Risk Definition

VTRA “2010” – Status

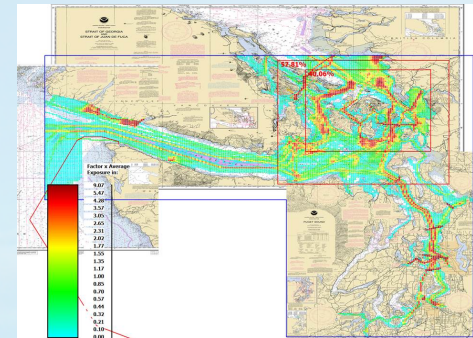


- Makah phase ended: GWU delivered final report/analysis with VTOSS 2010 data (NTA 8.1.1)
- PSP phase 1, modeling (3*) “What if?” scenarios
- VTRA SC directed researchers to simulate the projected traffic from the following potential projects:
 - Kinder Morgan pipeline expansion in B.C.
 - SSA Marine Gateway Pacific Terminal near Cherry Point, WA
 - Delta Port, Neptune, etc. expansion in B.C.

VTRA Steps

Past (**winter**):

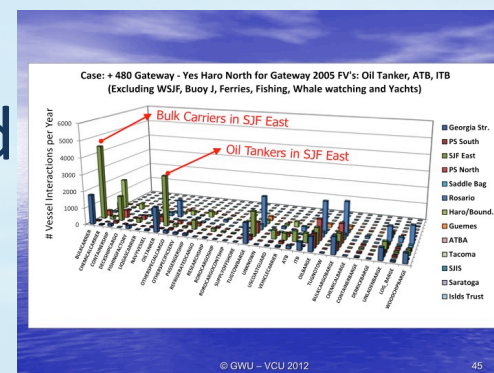
- Researchers extended classes of Focus Vessels, now includes cargo and bulk carriers (overall: FV=20%, IV=80% of exposure time)
- Now 1000s of actual routes/segments and VTOSS data scrubbed
- VTRA SC obtains/shares the best available data projections on projects to be simulated



VTRA Next Steps

Present (spring/summer):

- Researchers simulate project-based changes in traffic (+>**1500** trips/year) & note changes in ship interactions
- VTRA SC proposes mitigation measures to be simulated in model
- Researchers produce report on results with review by VTRA SC



VTRA Next Steps

Long term (fall):

- Report/results used in revised **Risk Management Strategy** for Puget Sound
 - Changes to Harbor Safety Plan, SOCs, BMPs, etc.
 - Regulatory changes considered by USCG, ECY (note that 2012 USCG Authorization Act calls for study of Canadian oil sands risks by June 2013)
 - Northwest Area Committee and its “2013-Emerging Risks Task Force” translate and use findings for contingency planning, GRPs, etc.

More info:

- todd.hass@psp.wa.gov; (206) 280 1588
- http://www.seas.gwu.edu/~dorpjr/tab4/publications_VTRA_Update.html



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About PSP

The **Puget Sound Partnership** has legislative mandate to recover the health of Puget Sound by 2020

- Also: “independently assess and advise Washington State’s oil spill programs”
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PSP Oil Spill Work Group

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LEADING PUGET SOUND RECOVERY

- Unique role to date:
 - Building consensus to set priorities in advancing unresolved and emergent oil spill policy issues for WA State (agencies), especially Puget Sound
- AA captures focus for Puget Sound in prevention, preparedness and response thru June 2014
 - All OSWG vetted NTAs on track (Strait notwithstanding)
 - PSP lead owner for VTRA NTA

Q1: Where would Work Group add value to other issues?

Q2: How/when to ID issues beyond 2014?
- Other emergent issues [existing forums]:
 - Derelict vessels [PS Derelict Vessel Task Force]
 - New modes/risks in oil transportation (e.g., rail) [NWAC emerging risks task force]
 - Grays Harbor
 - Columbia River

PSP Oil Spill Work Group

- *Q: Should we keep name “PSP Oil Spill Work Group” (Cross-Partnership OSWG) or other?*
- *Q: Should we consider including other members (local government/LIO, rail, etc.)?*